AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A method for detecting and identifying a toxin in a sample, the method comprises: providing an array comprising a plurality of biological membranes associated with a surface of a substrate, wherein said surface comprises a coating of an amine-presenting molecule, and said biological membranes are deposited directly to said coating; contacting the array with a solution comprising a target compound; and monitoring for binding activity of at least one biological membrane with said target compound.

2. (Original) The method according to claim 1, wherein said biological membranes contain a toxin-binding moiety.

3. (Cancelled)

4. (Original) The method according to claim 2, wherein said-toxin binding moiety is a carbohydrate.

5. (Original) The method according to claim 4, wherein said carbohydrate moiety is a ganglioside.

6-8. (Cancelled)

9. (Original) The method according to claim 1, wherein said biological membranes are arranged in distinct microspots.

10. (Original) The method according to claim 1, wherein said target compound has at least one constituent that is labeled.

11. (Original) The method according to claim 10, wherein said monitoring step comprises detecting for the presence of the label.

12. (Original) The method according to claim 1 , wherein the monitoring step comprises detecting directly a physical change due to the binding of said target compound to said biological membranes.

13 (Original) The method according to claim 1 , wherein the target compound has no labeled constituent.

14. (Original) The method according to claim 1, wherein said method employs a labeled toxin or known compounds with an affinity to the toxin molecule or to the receptor site.

15. (Original) The method according to claim 1, said toxin detection sample can be a synthetic or natural toxin, or from a human, animal, plant, food, or environmental source.

16. (Original) The method of claim 1, wherein the substrate includes a glass, ceramic, metal-oxide, metal, non-metal, silicon, or polymer material.

17. (Original) The method according to claim 1, wherein said substrate is either nano- or micro-porous.

18. (Original) The method according to claim 1, wherein the substrate is configured as a bead, chip, a slide, a multiwell microplate, or a microcolumn.

19-41. (Cancelled)

42. (Previously Presented) A method for detecting a binding event between a probe and target compound, said method comprising: providing an array comprising a plurality of biological membrane microspots associated with a surface of a substrate, wherein said surface comprises a coating of an amine-presenting molecule, and each of said biological membrane microspots comprises a biological membrane directly deposited to said coating; contacting a solution comprising a target compound with said array of probe biological membrane microspots; and detecting a binding event between at least one or more of the probe microspots with one or more constituents of the target compound.

43. (Original) The method of claim 42, wherein at least one of the constituents of the target is labeled and the detection step comprises detecting the presence of the label.

44. (Original) The method of claim 42, wherein the detection of the label is carried out by imaging based on fluorescence, phosphorescence, chemiluminescence, or resonance light scattering emanating from the bound target.

45. (Original) The method of claim 42, further comprising washing the substrate of unbound target prior to the detection step.

46. (Original) The method of claim 42, wherein the array of microspots is incubated with labeled target and an unlabeled target compound, and the binding event between the unlabeled target compound and the probe is determined by measuring a decrease in the signal of the label due to competition between the labeled target and the unlabeled target compound for the probe.

47. (Original) The method of claim 42, wherein the target is unlabeled and the binding event is determined by a change in physical properties at the interface.

48. (Original) The method of claim 47, wherein the change in physical properties at the interface is a change in refractive index or electrical impedance.

49. (Previously Presented) A method for identifying and detecting a toxin in a sample, said method comprising: providing an array comprising a plurality of biological membrane microspots associated with a surface of a substrate, wherein said surface comprises a coating of an amine-presenting molecule, and each of said biological membrane microspots comprises a biological membrane directly deposited to said coating; contacting a sample solution comprising an unknown toxin with said array of biological membrane microspots; and detecting the binding profile of the unknown toxin to at least one or more of the microspots.

50. (Previously Presented) The method of claim 49, wherein the sample is a biofluid from a specific infectious tissue, a solution from food or environmental sources or an aqueous solution comprising chemical toxins collected or concentrated from a contaminated gaseous media.

51. (Previously Presented) The method according to claim 1, wherein said amine-presenting molecule is γ-aminopropylsilane.

52. (Previously Presented) The method according to claim 1, wherein said amine-presenting molecule is selected from the group consisting of poly-lysine, polyethyleneimine, and chitosan.

53. (Previously Presented) The method according to claim 42, wherein said amine-presenting molecule is γ-aminopropylsilane.

54. (Previously Presented) The method according to claim 42, wherein said amine-presenting molecule is selected from the group consisting of poly-lysine, polyethyleneimine, and chitosan.

55. (Previously Presented) The method according to claim 49, wherein said amine-presenting molecule is γ-aminopropylsilane.

56. (Previously Presented) The method according to claim 49, wherein said amine-presenting molecule is selected from the group consisting of poly-lysine, polyethyleneimine, and chitosan.

57. (Previously Presented) A method for detecting a binding event between a receptor in a biological membrane and a target compound, said method comprising:

contacting a solution comprising the target compound with an array which comprises a plurality of biological membranes directly deposited to a coating on a surface of said array, each of said biological membranes comprising a receptor of interest; and

detecting a binding event between one or more said biological membranes and one or more constituents of the target compound,

wherein said coating comprises an amine-presenting molecule or a silane.

58. (Previously Presented) The method of claim 57, wherein said coating consists of a coating of said amine-presenting molecule.

59. (Previously Presented) The method of claim 58, wherein said amine-presenting molecule is selected from the group consisting of γ-aminopropylsilane, polyamine, and chitosan.

60. (Previously Presented) The method of claim 57, wherein said coating comprises a coating of said silane.

61. (Previously Presented) The method of claim 60, wherein said silane comprises a hydroxyl, a carboxyl, a phosphate, a sulfonated, or a thiol group.